

GREATER DETROIT RESOURCE RECOVER FACILITY

BACKGROUND

- THE GDRRF WAS DESIGNED AND CONSTRUCTED BY COMBUSTION ENGINEERING (CE). CE WAS ALSO CONTRACTED TO MANAGE, OPERATE & MAINTAIN THE FACILITY.
- THE FACILITY WAS COMMISSIONED IN 1989 USING ELECTROSTATIC PRECIPITATORS (ESP) AS THE AIR POLLUTION CONTROL TECHNOLOGY (APC). THE FACILITY FAILED TO MEET THE AIR EMISSION LIMITS FOR MERCURY AND HYDROGEN CHLORIDE AND WAS SHUTDOWN TWICE BY THE REGULATORY AGENCIES. UNDER CONSENT ORDERS THE FACILITY WAS ALLOWED TO OPERATE BUT REQUIRED TO REPLACE (RETROFIT) THE ESP'S WITH SCRUBBER & FABRIC FILTER/BAGHOUSE TECHNOLOGY.
- COVANTA ENERGY ASSUMED THE MANAGEMENT, OPERATIONS AND MAINTENANCE OF THE FACILITY IN 1991 INCLUDING COMPLETION OF THE APC RETROFIT PROJECT. THE RETROFIT WAS COMPLETED IN 1996 BY SUCCESSFULLY PASSING ALL AIR EMISSION STANDARDS OR LIMITS.
- THE ATTACHED TABLE PROVIDES AIR EMISSION STACK TESTING DATA PRE AND POST RETROFIT.

Michigan Waste Energy Emission Results

Pre and Post Retrofit Emissions

	1989 Actual Results (ESP)	2004 – 2006 Actual Results	% Below ESP Result
Particulate (mg/dscm)	13.69/Unit (avg)	1.7033/Unit (avg)	87.6%
Dioxin/Furan (ng/dscm)	5107.5/Unit (avg)	5.5/Unit (avg)	99.9%
Mercury (mg/dscm)	0.7241/Unit (avg)	0.0013/Unit (avg)	99.8%
Lead (mg/dscm)	0.9480/Unit (avg)	0.0084/Unit (avg)	99.1%
Cadmium (mg/dscm)	0.0101/Unit (avg)	0.0002/Unit (avg)	98.0%
CO (ppm)	183.15 (24 hr avg)	54.88 (24 hr avg)	29.9%
NOx (ppm)	209 (24 hr avg)	211 (24 hr avg)	0%
SO2 (ppm)	135.27/Unit (avg)	13.66/Unit (avg)	89.9%
HCl (ppm)	546.31/Unit (avg)	4.60/Unit (avg)	99.2%

Note: All concentrations corrected to 7% oxygen.

The Role of Energy from Waste in a U.S. Climate Change Strategy

Energy from Waste facilities should be included as an eligible Greenhouse Gas (GHG) offset category in any U.S. mandatory climate change program and should be exempted from any emissions cap:

- Many European Union countries are using greenhouse gas reductions attributable to Energy from Waste (EfW) to demonstrate compliance with their Kyoto as well as the European targets
- Further, the recently approved AM0025 ver.7 methodology, used to assess GHG reduction projects under the Clean Development Mechanism of the Kyoto protocol, establishes concise process for qualifying EfW facilities for the production of GHG credits
 - AM0025 recognizes the benefit of EfW in two categories; the elimination of methane that would otherwise result from landfilling of waste and the offsetting of fossil fuels for electricity generation
- While any carbon offset protocol for EfW should use the EPA-developed protocol (the Decision Support Tool for Solid Waste Management, aka DST), the protocol should consider the total lifecycle CO₂ equivalent emission benefits of EfW plants including the following:
 - The quantity of municipal solid waste combusted by an EfW plant that otherwise would be disposed of in a landfill, and the resulting amount of avoided GHG emissions
 - To be consistent with a policy objective of producing tangible GHG reductions in the next 20 to 50 years, the Global Warming Potential (GWP) of GHG should be based on a 20 to 50 year life-cycle analysis, rather than the 100 year cycle now commonly used
 - When using the 100 years life cycle, methane is 20+ times more potent than CO₂. If the shorter life is used, methane's GWP is up to 60 times more potent than CO₂.
 - On a national basis, estimates from the DST are that for every ton of municipal solid waste combusted by an EfW plant, nearly one ton of CO₂ equivalent emissions is avoided (when measuring methane's carbon dioxide equivalent based on a 100 life-cycle of methane)
 - The total CO₂ equivalent emissions benefits of EfW plants should be based on a 20 to 50 year life-cycle analysis of methane's GWP, roughly 1 ton of solid waste combusted by an EfW plant avoiding 2 to 3 tons of CO₂ equivalent
 - The amount of electricity generated by an EfW plant that otherwise would be generated by other baseload, fossil fueled, electric generation resources; and
 - The quantity of metals recycled by an EfW plant that otherwise would be manufactured from virgin materials

EfW plants should receive GHG offset recognition that accounts for the avoided emissions benefits associated with their operation and be exempted from any emission cap. Further, the GWP of methane, the second largest greenhouse gas in the U.S. should be measured on a 20-50 year life-cycle analysis rather than 100.